

CLAIMS

1. A device, characterised in that it
5 comprises at least one coil, in which a magnetic alternating field can be generated and into which a sample can be inserted, where said magnetic field causes an increase of the thermal and/or kinetic energy of magnetically susceptible particles in said sample, the increased thermal
10 and/or kinetic energy of said particles causing the formation of pores in biological membrane-enveloped structures which are to be found in said sample, said pores allowing introduction or extraction of bioparticles into/from said biological membrane-enveloped structures.

15 2. A device as claimed in claim 1, characterised in that said magnetic field has an alternating field direction of a frequency in the range 1-5 MHz.

20 3. A device as claimed in claim 1 or 2, characterised in that said magnetic field has a field strength of at least 1 mT.

4. A device as claimed in any one of claims 1-3, characterised in that said magnetic field is non-homogeneous and has an alternating gradient field direction, the direction of said alternating gradient field
25 being generated by two coils, and said sample is inserted between the coils.

5. A device as claimed in claim 4, characterised in that said coils are supplied with alternating current of different frequencies.
30

6. A device as claimed in claim 4, characterised in that said coils are supplied with either the positive or the negative part of the supplied alternating current.

7. A device as claimed in any one of claims 1-6, characterised in that it is equipped with a thermostat for accurate temperature control of said coil or coils and/or said sample.

5 8. A device as claimed in any one of claims 1-7, characterised in that it is equipped with a variable timing for accurate control of the time during which said alternating current is on and during which said sample is exposed to said applied magnetic field.

10 9. A device as claimed in any one of claims 1-8, characterised in that it is equipped with a control system for accurate setting of strength and frequency of said alternating current.

15 10. A device as claimed in any one of claims 1-9, characterised in that said biological membrane-enveloped structures consist of body tissue, cells, bacteria, virus particles, organelles at a sub-cellular level, liposomes or proteins.

20 11. A device as claimed in any one of claims 1-10, characterised in that said bioparticles are DNA molecules, RNA molecules, proteins, other biopolymers, peptides, chemical preparations, organic compounds, inorganic compounds or synthetic polymers or combinations thereof.

25 12. A method in which the device as claimed in any one of claims 1-10 is used for specific lysis of cells.

13. A method in which the device as claimed in any one of claims 1-10 is specifically used to modify the genetic code of a host cell and/or metabolism.

Add A3

SUB
A2

13069005-022002